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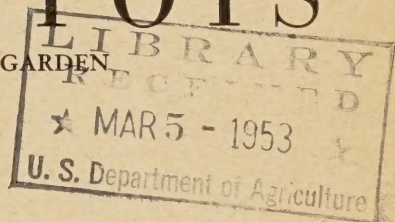
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BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,
ORCHID, GESNERIA AND OTHER PLANT FAMILIES
AND MANUAL OF THEIR CULTURE.

Many Reduced Prices. New Items Listed. Complete Culture Directions.
A Personal Letter, — to You,
"The Pleasures of Life."

SPRING 1953



CECIL HOUDYSHEL

1412 Third St.

La Verne, Calif.



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of Agriculture
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THE PLEASURES OF LIFE. (A personal letter, — to you.)

Dear Floral Friends,

So many friendly letters come from our customers which I am unable to answer, that for many years I have written one letter for all and placed it thus in our catalog. I try to discuss topics of common interest and worth an exchange of ideas.

Pleasure and happiness are primary motives for all human endeavor. According to a revered American document, the pursuit of happiness is an inalienable right. Whatever we work for, our ultimate aim is happiness. My deductions will be entirely impersonal. I am presenting ideas, not myself or my habits.

Pleasure and happiness are not exact synonyms. Perhaps pleasure is a more temporary feeling and happiness a more continued state. But the synonymy is close.

Another American tradition is expressed on all our coins. "In God We Trust." Making others happy is a good second step. If one has wealth or other means of adding to the happiness of others, let us remember, it is more blessed to give than to receive. If we haven't money to give, we can give service or goods at right prices.

We hear much praise for elegance, gracious living, fine foods, houses, furniture, leisure. These things are not always good and they do not make us happy of themselves. Juvenal, the Roman satirist who lived in the first century A. D., denounced the lax and luxurious living of the Romans in many bitter diatribes. His "Mens sana in corpore sano," (A healthy mind in a healthy body) is still a good maxim. We cannot deny that luxury, excesses, idleness and easy living weaken both mind and body. They lead to loss of health, a short life and they fail to make us happy. If we have the means, this does not mean that we should not have a comfortable and artistic home and surroundings. They are enjoyable when relaxing from toil.

I will recommend more highly, activity and self restraint. The old adage, "use it or lose it, is eternally true. Legs were made for walking. If you do not walk you finally become unable to walk. Unused muscles finally become useless. All body organs need activity. The mind is in equal need of it. Use it or lose it. A keen mind adds to our resources for pleasure. A senile mind is seldom a necessary characteristic of old age. One can always learn, at any age and can always improve. It requires a good mind to manage an old body.

Many who retire from work do not retire from the full dietary that work requires. Often they become too fat and their lives are shortened. Slowing down may have been proper but keeping the furnace of our energy machine full without using all the energy, leads to a storage problem for the excess and often the person becomes fat and life is shortened. The functions of the body and mind must be used or lost.

The well being of our body depends upon the mind and the will that manages both. We must give this our attention and adopt a regime that will keep the mind active, disciplined, efficient and logical. Reading maketh a full man, therefore read much. Magazines, newspapers and good books. In youth to maturity we should have learned to distinguish between the true and the false, the good and the evil. This ability may be increased thruout life.

Walking and gardening are the best exercises. Hobbies are recommended by all medical authorities. I know of no hobby that is more fitted to man's primitive instincts than gardening—out doors, in the house and greenhouse. All hobbies that involve our creative ability are useful, yet growing plants tops all. It involves skill, good judgment and ability to learn. We must learn not to blame the bulbs, the seeds or the plants for our failure. An alibi is an easy way to escape responsibility but one does not learn that way. We learn painfully sometimes but it is impressive. Poor stock can be the cause but much more often it is poor handling. Even a poor plant can be made vigorous.

We have made research for the most interesting and beautiful plants. Study carefully our lists of African Violets, Gloxinias, Achimenes and other Gesneriads; the famous Blood Lilies, Amaryllis, Crinums, Clivias and other Amaryllids; the Gloriosa, Anthuriums, Marantas and all that we list.

Our culture advice is based on long experience. Much that is read in newspapers

or magazines is based on a reading knowledge. I have read in a prominent magazine that the Yellow Calla should be planted in Aug.; a discussion of Amaryllis culture that included Brunsvigia (formerly classed as Amaryllis belladonna) and the true species Amaryllis. But they are as different as corn and wheat. Their culture is equally different.

One can enlarge the gardening scope by growing in the outdoor garden, the house and a greenhouse. There are many excellent greenhouse builders in this area. Our experience is limited to only one, Wilbur G. Wood, 1621 Irving Ave., Glendale 1, Calif., who built our Aluminum house for the African Violets. He will publish a catalog soon. Ask for it and tell him I sent you. Lord and Burnam, Irvington, N. Y., build the Orlyte, an excellent house. Both builders make prefabricated houses that you can erect yourself.

Among the pleasures that we have recently had was a visit from Maj. Albert Pam, O. B.E., of England, who has long been a world traveler and explorer in the field of horticulture. His enthusiasm and delight with plants is most inspiring. He has discovered and introduced many new and valuable species, one of them, named in his honor, Pamianthe. Read about him in vol. 5, 1938 Herbertia.

We have certain business principles. We publish no testimonials. We make only reasonable guarantees and allow our customers to assume the responsibility of giving the proper culture. We do not brag nor claim superiority. We are not "high hat." We are not out for all the money we can get. If someone orders a plant that we believe is not suited to their climate or the conditions they are equipped to give, we tell them before we ship. We aim to serve you.



Here is Mrs. Cecil Houdyshel, who manages our two violet greenhouses. She is always adding to her Kodachrome slides of all our plants. She rents these, with a typed lecture, to Garden Clubs. Ask her for terms. Alongside is great granddaughter Sherry, now two years old and a great conversationalist, by phone or in presence.

Wishing you garden success in 53,

Cecil Houdyshel

TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices by catalogs, price lists or advertisements. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 3% Sales Tax.

Remit in advance, in full, by check, or M. O. No C. O. D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. Checks and M. O.'s must be payable to Cecil Houdyshel to fit our endorsement stamp. Stamps at face value accepted for small sums only. For over 50c send 5% extra.

Postage rates are higher. Advertising, labor, everything else costs more. Our average prices are lower but we still send all items postage prepaid on orders of \$1.00 or more, unless otherwise noted. Under \$1.00, send 15c extra. Seed orders are excepted if you send self addressed, stamped envelope. When you compare prices, remember we deliver free.

Express shipment is safer especially in winter. It costs more and we ship by express, f. o. b. when requested. Extras either in size or number are included to balance your expense, approximately.

Air Parcel Post is also often advisable. If ordered to be sent thus include extra for postage. We prepay to Zone 8. By air we charge the excess above this. Estimate this. If too much we give you a credit or refund. If not enough, you must be willing to assume the extra cost.

Insurance up to \$5.00, costs 5c extra. \$5.00 to \$10.00, 10c. \$10.00 to \$25.00, 15c. Over \$25.00, cost is in proportion to \$25.00 value rate. Postal insurance covers all except freezing in transit. Only Express covers freezing. **Special Handling** costs 15c up to 2 lbs.

2 to 10 lbs., 20c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 35c. 2 to 10 lbs., 45c. Over 10 lbs., 60c.

Each fee, Insurance to Special Delivery is for one package only.

Order blanks. Make your own. They should not be in letter form as this makes it difficult for packers. Place one item only in a line, in this order: 1. Quantity ordered. 2. Name of item but not description. 3. (In column on right) price of item. Below add other extra expenses like sales tax, insurance, etc.

A letter that requires an answer, when included with order, is referred to me and will likely cause delay of delivery. I am often a month behind with correspondence.

Wholesale. We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will give best quantity prices.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insect and Pest Act. Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. Many Latin American countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your Postmaster. Usually only a permit is needed.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting.

We guarantee our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. Such a guarantee usually means that the expense of replacements is spread over the entire sales and everyone pays more for the plants. Everyone fails sometimes and we try to learn from our failures. As necessary culture directions are in this catalog, we send none with bulbs and other plants.

Catalogs. Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested, please refuse catalog or ask P. M. to return at our expense.

All **Catalogs** and **Price Lists** are priced at 10c because of increased cost of printing and of postage. Please do not ask for free copies for yourself or friends. One dime places you on our mailing list and you then receive catalogs as long as you send orders for \$1.00 or more each year.

We ship to every state and territory and to every continent. Calif. bulbs and plants do well, everywhere.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus. Some plants, like Bearded Iris do best in a heavy soil. Plants of this nature seldom if ever like shade or acid soils and deep drainage is not so necessary. Some plants, like Gloriosas must have deep sandy soil. Probably most tuberous plants prefer quite sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical

fertilizers are like "patent" medicines. They are stimulating but often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphids, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled.

See our listing of **Insecticides** under **Garden Supplies**.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible garden hose. See the listing. It is the most economical of all.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like *Gladiolus* prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A 2½" *Amaryllis*, for example, needs a 6" pot. A 1½" *Eucharis* needs a 5" pot. Small bulbs like *Ranunculus* or *Achimenes* may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine or use singly, peat, sphagnum and rotted leaf mould with old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be $\frac{2}{3}$ sandy loam, $\frac{1}{3}$ humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit.

For the starting temperatures and further culture of the plants please read the culture advice given with the listings.

Sources of Further Information. Please note our **Garden Reference Books**. Join local garden clubs. Subscribe for as many garden magazines as you can. We especially recommend Popular Gardening, Dept. H, 90 State St., Albany, N. Y., and Flower Grower, Dept. H., 99 N. Broadway, Albany, N. Y. We are charter subscribers of both. I suggest you buy copies of each at your newsstand. You will probably then subscribe for both of them.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs, or trees. Price \$40.00. It is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

Hortus Second (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains only a few culture hints. Both works should be in every garden library. Price \$10.00.

The above publications are subject to price changes, without notice, by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp., \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. 266 pp., \$4.00. If you have a greenhouse, this is a necessity.

How To Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Being non-professional or amateur, Mr. Chabot knows best an amateur's problems and how to advise him. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums. The best for amateurs on this subject. By Helen V. P. Wilson. \$3.95.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$2.75.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price, \$3.50.

How To Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price, 25c.

How to Grow *Cattleya* orchids and a few others is told briefly in our 1949 Orchid Price List. The listings are now all cancelled. Price, 15c.

The Complete Book of African Violets. By Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$2.95.

How To Grow African Violets. By Carolyn Rector. 94 pages, paper-board covers. Illustrated. How to pollinate, hybridize, grow from seed or leaf cuttings, prepare soils, control pests and diseases, groom plants for show, etc., by a real grower. \$1.35.

Trees For American Gardens, by Dr. Donald Wyman of Arnold Arboretum. Illustrated. 376 pages. If interested in the most beautiful trees and the proper ones for your conditions, you need this book. \$7.50.

The Book of Trees. By Alfred C. Hottes. 200 illustrations. Everyone loves trees and this book describes all worth while trees, their stories, uses, culture; historical trees; lists for every situation. Mr. Hottes knows trees and writes in a charming style. 440 pages. \$4.00.

The Wise Garden Encyclopedia. By a group of American authorities. Edited by E. L. D. Seymour. 1,380 pages. Profuse illustrations, 64 pages in color. Price, \$5.00.

A to Z On Fuschias. 136 pp. Cloth bound. Illustrations, some in color. 700 varieties described. \$3.00.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. This loses time and expense for both of us. Please do not order such items unless you include the postage. Here is how to find it. We are very near Los Angeles. Call your P. O. and ask the cost of postage on the packed weight given from your P. O. to Los Angeles and send us that amount.

If your shipment goes by express, no postage is due. But the minimum cost of an express package is now \$1.61, any weight, any distance.

Snail-Kil Pellets. 1 lb., 45c, plus postage for 2 lbs. Two pounds, 75c, plus postage for 3 lbs.

Ant-B-Gon. Set of 4 filled dispensers, 75c, plus postage for 1 lb. Refilling liquid, 4 oz., 40c postpaid.

Volc Oil Spray, for outside plants. Kills mealybugs, scale, red spider, etc. Don't use on orchids, saintpaulias, or most house plants, palm trees or ferns. Fine to clean up your shrubs, trees and most outside plants. 4 oz., 50c postpaid.

Thrip O cide. Contains D. D. T. Kills thrips on *Gladiolus* or other plants, Scale on Orchids. 4 oz., \$1.20 postpaid.

Vio-Vim, a Fungicide and Bactericide for African Violets. 75c prepaid. Its effect is apparent in the stimulated growth of the plant.

Wonder Garden Spray. Spray as directed for cyclamen mite, mealybug, red spider and other pests. \$1.10 prepaid.

We assume no risk for results with insecticides.

Spoonit is the fertilizer we use on African Violets and other house plants. It is equally good on outside plants. Analysis: nitrogen 18%; phosphoric acid 18%; potash 14%. To use, dissolve level tablespoonful in a gallon of water. It never burns. Apply once a month.

Give transplants half strength. 6-oz. package, 50c, plus 8c postage; 24 oz., \$1.25, plus postage on 2 lbs.; 4 lb. package, \$2.50, plus postage on 5 lbs.

Potting Soils. We do not sell them but give you the formulas and list materials for making them. We bought some Gloxinia soil once and Gloxinias would not grow in it, because it was dirt and they must have compost with little or no dirt.

Peat. Best Holland Peat in highly compressed bales. 4 lbs., 50c; 10 lbs., \$1.00. F. O. B. If by mail, add 2 lbs. for carton and send the postage. Bales weigh about 100 lbs., up to 115. Price \$7.00, plus 50c packing charge if shipped. F. O. B. Express.

Sphagnum Moss. Best we can get. 70c per lb., postage extra, for 2 lbs.

Osmundine, best Florida brown fiber \$1.35 per lb. package, postpaid.

Plant Labels. The following are plastic labels, easily written upon with pencil.

Pot Labels, length $4\frac{1}{2}$ ", 35c doz. Length $3\frac{1}{2}$ ", 30c doz. Small labels for African Violets, 2" long, 30c doz. **Orchid Labels.** Perforated on one end, but without wire or cord, $2\frac{1}{2}$ ", 30c doz. **Aluminum Tree Labels.** Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent. Aluminum wire to tie on. 35c doz. Package of 50, \$1.00. Please include with order of \$1.00 or more or send 15c extra for handling if order is under \$1.00, on all label orders.

Plastic Garden Hose. The best made. Cheap plastic hose will disappoint you. This hose is not damaged by sun, weather, being run over by trucks. Only hot water under pressure will injure it. It should last 8 yrs. or longer. Weighs only $3\frac{1}{2}$ lbs. per 25 ft. Price, 25 ft., \$5.50, plus postage on 4 lbs. 50 ft., \$10.75, plus postage on 7 lbs.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting steel. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price with hangers: 8", 95c, \$10.50 per doz.; 10", \$1.20 ea., \$12.75 per doz.; 16", \$2.75, \$25.00 per doz. Postpaid.

Snap On Pot Hangers, for hanging any size pot in tree, lath or greenhouse. Galvanized, non-rusting steel. 45c ea., \$4.50 per dozen.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits $\frac{1}{2}$ " pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c.

Hose End Fogger. Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a movable fogger. \$1.50. Postage 10c extra.

Rootone. Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. $\frac{1}{2}$ oz. 50c, postpaid. 1 lb. can, \$5.00, plus postage for 6 lbs.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

Supplies do not take quantity rates as applied to bulbs except as specified.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the species (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis

Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton B. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present shortage of paper and its high price these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to us with your plant order.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, *Epidendrum*, and under the genus *Amaryllis* he included certain *Crinum*s, *Zephyranthes*, *Sprekelias*, *Brunsvigias*, *Nerines*, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "Gentes Herbarum," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: *Brunsvigia rosea* (*Amaryllis belladonna*); *Amaryllis advena*, (*Hippeastrum advenum*).

Agapanthus means Love Flower. Blooms in spring and summer. Large attractive umbels, blue or white on tall erect stiff stems. Easy to grow in south in full sun or slight shade, any good soil, and in the north in tubs or buckets, wintered in basement. Delivery any time.

A. longispathus. New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 45c. 3 for \$1.15.

A. orientalis (unbellatus). Blue Lily of the Nile. Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 50c ea. Large roots, 75c.

A. orientalis, "Sky Blue." Lovely light blue. 75c ea.

A. orientalis alba. A pure white. \$2.00.

Amarcrinum Howardii (*Crinodonna* Howardi). A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. Fall bloomer, order early or it may skip blooming first year. Hardy in south. For large pots in north. A very popular and desirable bulb. Culture similar to its parents. \$2.00 and \$3.00 ea.

Amaryllis Linn. This genus as constructed by Linnaeus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "*Hippeastrum*," literally translated "horse star," we can now say "horse feathers" and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, *Amaryllis* bulbs need to be covered only about an

inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" deep is better. Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough.

We do not advise you to plant imported or greenhouse grown bulbs in the outside garden. They seldom last more than a year or two. These high-bred "hybrids" have been bred for the perfection of the flowers. Little or no attention has been given to vigor. They can be shifted to the garden for summer growth but they must be given special attention, watered frequently and fertilized carefully. Take them inside for the winter. If they do not make roots promptly, try starting in small pots of sphagnum, well compressed and kept moist. When well started, shift with lump of sphagnum into proper sized pots. To get good growth, fertilize with Spoonit.

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure. One tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. Set the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. The best temperature now is 50° or 60°.

When you are sure roots have started give a little more heat, more light, more water. But increase all these gradually and avoid a soggy condition of soil at all times. Forcing Amaryllis, with heat, before a good root system is made may result in failure. When favorable growth responds bring plants to higher temperatures, gradually, to 60°, 65°, 70°. Increase sun exposure too. Finally 70° to 75° and full sun if not too hot.

After flowering the bulb has shrunk and a long period of growth is necessary. If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth.

There are no quantity discounts on Amaryllis except as specified in the listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed where peaches or apricots may be grown. Plant bulb 6" deep or more, and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. **Special prices:** Largest bulbs 60c. Blooming sizes 50c. Delivery in June when dormant.

A. ambigua. The flowers have a long tube, like a lily. There are 5 or more on a very tall scape. The exquisite, spicy fragrance perfumes the entire garden. Customers report success with pot culture. Hardy in south. Plant 4" deep in garden. \$2.50.

A. immaculata. Usually known as *A. candida*. The long, tubular, lily-shaped flowers are pure white. Deliciously fragrant. This is an exquisite Amaryllis and very rare. Bulbs sometimes reach 4" to 5" diam. Part of the price must pay the postage. \$4.00. Immense bulbs, \$5.00.

Hybrid Amaryllis. Our hybrid Amaryllis are selected from the best field grown. American strains and we call them therefore "Select Strains." They are far hardier and

more easy to succeed with than greenhouse grown, imported bulbs. In order to produce high quality, selected bulbs are grown in the greenhouse one year for seed production. They are cross pollinated by hand. When these flower in the field, those not true to the color class of the parents are rogued out. Some off colors are likely to be missed and we do not guarantee the color but if customer is not satisfied when they flower, the bulb may be returned and we will replace. Even tho when the color is not as expected, few customers are willing to part with the bulb. Assorted colors cost less, are equally satisfactory and equally good. Very often one gets from them pure self colors worth three times the cost.

Select Strains, assorted shades of red, scarlet, crimson, rose and salmon. This spring in order to reduce the prices of these favorite colors in Amaryllis we have placed them all in one mixture. No choice of the shade may be made at these prices. We are also offering some small sizes and you may have the fun of growing them on to blooming size tho sometimes a bulb as small as 2" will flower. Prices: 1"—2" diam. 45c. 12 for \$5.00. 2"—2½", 65c. 12 for \$7.50. Blooming sizes, 2½"—3", 90c ea. 3 for \$2.50. 12 for \$9.50. 3"—3¼", \$1.50, 3 for \$4.25. 3¼" up, \$2.00, 3 for \$5.60.

Select Strains. Near White. These have much less color than White Backgrounds (which we are unable to list this year). We find about 5% are pure white. Color markings are variable but not too conspicuous. 2½", \$2.50, 3 for \$7.00. Larger bulbs, about 3" diam. or over, \$3.00 ea.

A. Johnsonii. The first Amaryllis hybrid ever produced by man, 150 years ago and now distributed thruout the world. A favorite of southern gardens. Red with white center stripe. Blooms from smaller bulbs than most varieties. Small, 40c. Probable blooming sizes, 60c and 80c ea.

A. Sibyl Houdyshel. In 1910 to 1912, while Supt. of City Schools in Virginia City, Nev., I frequently visited Luther Burbank at Santa Rosa, Calif., on trips back to our home at Pomona, Calif. On those trips, I saw his new introductions of Amaryllis hybrids and made a few selections. The most outstanding I named for my sister Sibyl Houdyshel. It is a White Background type with a line of rosy pink edging the petals and other markings of this color. This is now probably the only one of Burbanks Amaryllis originations still in existence. It is a good White Background but not superior to some of the Howard and Smith Amaryllis. It is worth preserving however for its historical interest and for use in hybridizing as its seedlings are often outstanding and are sturdy, easily grown Amaryllis. Our largest bulbs are 2½" to 3", price \$6.00. 2"—2½", \$4.00. 1½"—2", \$2.50. No quantity reductions. The larger size should flower. 2" bulbs sometimes flower, but smaller sizes are unlikely to flower this year.

Houdyshel's Hardy Hybrids. These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden farther north.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price 75c each. \$7.50 per doz. \$50.00 per 100, prepaid. Extra large bulbs, \$1.00. \$10.00 doz.

Amaryllis Seed, Select Strains. There is a small remnant of the 1952 crop. If planted and grown as advised below, we guarantee 50% germination. After they come up, they are your responsibility. 25 seed for 50c. 1953 crop will be ready about July. Price 25 seed for \$1.00.

Plant seed as soon as received in good sandy loam soil. Add a good portion of fine leaf mould. Seed may be just touching on edges. Cover with ½" soil. If in pots and soil

is wet, cover with a pane of glass and they are likely to come up before soil becomes dry. Keep seedlings in house or greenhouse the first 2 or 3 winters so that they can grow all winter. If this is done, they usually begin to flower in 2 or 3 years. They can be transplanted at any time to give more growing space.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. Seed should be planted soon after ripening. Some of the seedlings of our Select Strains will be fine self colors.

Clivias have evergreen, strap-like foliage somewhat resembling that of *Amaryllis*. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. **Special temporary prices.** We want to move a lot out of a lath house and offer these special prices. Blooming size, \$2.50. Smaller sizes at \$1.00 and \$1.75 ea. Very small, 50c.

C. cyrtanthiflora. The flowers are tubular and long, yet they are so numerous that they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price, \$15.00. Only 10 plants available.

Most **Crinums** are large bulbs and plants tho a few are no larger than an *Amaryllis*. They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they are indispensable.

The lovely lily-shaped flowers are useful to florists especially those who must grow most of their own flowers. They are particularly nice in a wreath.

Culture. *C. bulbisperrum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, *Cecil Houdyshel* and *Powellii Alba* are almost if not entirely as hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much

leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing Crinum. If your Crinum foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to this soil will lower the pH and probably cure the plants.

Crinums succeed in large pots or tubs but most of them require much space for house or greenhouse growing. Tubs can be stored over winter and set outside in summer. In the south the bulbs may be planted very shallow.

Crinum Americanum. Our only native species. Beautiful, narrow petaled, light pink flowers. Resembles a spider lily. This is a superior clone that does well in California. \$1.50.

C. bulbispermum. We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, alba, and offer only the pink, rosea. Hardy in north, if planted deep. Small, 50c. Good blooming size \$1.00.

C. campanulatum. Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00. Very large, \$1.50.

C. Cecil Houdyshel. Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as C. Powellii but with C. bulbispermum as the seed parent. Instead of flowering only once, like Powellii, this hybrid flowers most profusely. One very large bulb has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall.

An article in the Kansas City Star by Jack Romine, reported it hardy in that vicinity. Now there are many growing from Topeka, Kan. to Independence, Mo. If planted 6" or 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero temperature. Spring is the best time to plant this and all Crinums in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

We offer several sizes. Smaller sizes will give a start but are unlikely to flower the first year. Prices: Small, \$1.25; medium, a blooming size, \$2.00; large, \$3.00. This year we have some jumbo bulbs that require so much postage we must price at \$4.00. In time, even these grow still larger. They multiply profusely and soon form a large clump.

C. Ellen Bousanquet. Large, glowing, dark wine red flowers. The most beautiful crinum. \$1.00 and \$1.50.

C. Erubescens. Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

C. H. J. Elwes. Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

C. Louis Bousanquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. 75c and \$1.50.

C. Moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves give the plant great decorative value. Requires shade. Nearly as hardy as bulbispermum. \$1.00 and \$1.50.

C. Peach Blow. Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. Blooming size \$5.00. Largest for \$6.50.

C. Powellii alba. Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. For pots only. Soil, coarse, fibrous loam with coarse sand, granular charcoal, tablespoon of bone meal and a little cow manure added is usually recommended. We add peat and milled or even coarse sphagnum moss and get excellent growth and flowers.

Because they need abundance of water when blooming, the drainage must be perfect. Use 5" pot. Feed with Spoonit or manure water except when resting, shaded but

plenty of light and some sun is needed to develop flowers. Frequently they flower very soon after potting. If they do not, induce good growth for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent entire loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. From 2 to 4 crops a year may be had. They are tropical plants and 65° is the best minimum night temperature. We offer best and largest imported bulbs we can get, about 2" diam., at \$2.00.

Elisena longipetla. Very rare and lovely Peruvian amaryllid. It is related to the Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. It may be crossed with Ismene. \$2.00.

Habranthus robustus. Long tubular, lavender pink solitary flowers. Closely related to Amaryllis. A "now and then" bloomer in all seasons if watered well. Hardy in middle south and a good pot bulb. Plant 4" deep. Full sun. 40c ea.

H. brachyandrus. A larger purplish flower that is most attractive. Like most Habranthus they bloom several times a year by alternate dry and wet weather, natural or artificial. \$1.00 each.

H. andersoni texanus. A small Texas native sometimes called Rain Lily as it blooms many times a year, after a rain. Coppery yellow. 50c ea. Delivery in spring when dormant.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be very sandy and contain a good proportion of leaf mould or peat as they are shade plants and like mildly acid soils.

H. albiflos should be potted with half of the bulb above surface. The others covered to top of bulb. When growing, they should be kept moist, not soggy.

Haemanthus produce red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this every few days as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf.

Haemanthus albiflos, type var. 2-4 leaves, erect. Umbel of 100 or more small white fls. in fall. Evergreen. \$3.00. Delivery any time of year.

H. carneus. A small species that is winter growing like coccineus. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem. They begin in early July and some flower as late as last of Aug. Two short, prostrate leaves follow the flowers. \$2.50. Delivery, late spring when dormant.

H. coccineus. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Good flowering size, \$3.00. Extra large that should give many more flowers and seed, \$4.00. Order early. They are usually thru flowering, even in storage, by Sept. 15 to 30. Order now and we can deliver about June.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in dia., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 10" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited. Good flowering size, \$5.00. Largest size with several offset, small bulbs

attached, \$7.50. Delivery Jan. to Apr. Too tender for mail delivery to north when very cold. We will ship f.o.b. express very early or await warmer weather and ship postpaid. Please instruct us. We select larger bulbs for express shipments.

H. multiflorus. In general appearance, it resembles Katherinae, but a little larger plant from large bulbs but slightly smaller umbel of flowers. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has sold by florists for \$25.00 when flowering. Try crossing it with Katherinae. Blooming size, \$5.00. Largest bulbs, \$7.50. Delivery about Feb. to April but not by mail to north until weather permits. Express is safe, any time.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

Hemerocallis Araby. 30". E. A lovely pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 36". July-Sept. 50c.

H. Cinnabar. E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

H. Evangeline. 40". Large, rosy flowers with purple eye zone. Early. \$1.50.

H. Florham. E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

- H. Modesty.** 36". Large, pale creamy yellow. Our nearest white. \$1.25.
- H. Nubiana.** E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.
- H. Patricia.** 30". Pale yellow, large fragrant flowers. July-Aug. \$1.00.
- H. Radiant.** 42". Rich orange, June-July. 50c.
- H. Rajah.** 40". Deep English red, veined darker. Garnet red eye-zone. July-Aug. 75c.
- H. Rosita.** E. 36". Near carmine, tinted copper. Part shade best. \$1.00.
- H. Royal.** E. 40". Beautiful golden yellow. Fine texture. July. 75c.
- H. Serenade.** 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.
- H. Sibyl.** E. Dark red-purple petals, lighter sepals. \$2.00.
- H. Soudan.** 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.
- H. Spitfire.** 30". Fiery red, yellow mid-rib and throat. Almost constant bloomer, spring to fall. \$1.50.
- H. Vesta.** 30". Deep orange with glistening gold sheen. May-July. 50c.
- H. Vulcan.** E. 30". Darkest maroon red. July-Aug. 75c.
- H. Wau Bun.** Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.
- Ismene.** Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."
- Culture.** They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismenes can also be grown in pots.
- Ismene calathina.** Type variety. 35c and 50c ea.
- I. festalis.** An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. \$1.50.
- I. Sulphur Queen.** Hybrid of *I. calathina* and *I. Amancaes*. Light yellow. Very rare, beautiful and most desirable. \$1.00 ea.
- I. macleana.** A very tiny Ismene on long stems. Probably the hardest. 35c.
- I. Olympia.** The giant among Ismene and it is magnificent. The huge flowers are tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$2.50.
- Ismene Collection.** One bulb of each, 5 varieties, \$5.25.
- Pancratum maritimum.** A writer in *Sunset* calls this the Sea Daffodil. Foliage grey-green. Flowers pure white, very fragrant and resemble the Ismene. Tender, grow in pots in north. 50c.
- Sprekalia formosissima.** Jacobean Lily. Orchid Amaryllis. Aztec Lily. Type variety. A well known, half hardy Amaryllid. Can be grown in pots or in the garden. In the far north, it can be dug and stored in the fall like *Gladiolus*. Bright scarlet, large flowers, somewhat orchid like in form. Seedlings vary in color. 50c. Jumbo bulbs, 80c.
- S. formosissima superba.** A larger form. 50c and 75c ea.
- Tulbaghia violaceae.** Small cousin to *Agapanthus*. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz. Delivery all year.
- T. fragrans.** This much larger species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It was introduced to this country only a very few years ago. It has larger, more fragrant flowers than *violaceae* in the same color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$2.00. Delivery all year.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Zephyranthes candida. Pure white, evergreen. The masses of white flowers in late summer make them outstanding in a bed or edging for border. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz.

Z. grandiflora. The largest Zephyranthes. It is very easy to grow. In the south, its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 20c. Per doz. \$1.50.

Z. rosea. Small, but very lovely deep pink flowers. They do not do well in very alkaline soils. It should be neutral to mildly acid. Fine in pots, about 8 or 10 in a 5" pot. 15c ea. 10 for \$1.25.

The Alliae, or Onions, are now classed in Amaryllidaceae. The following are ornamental and useful for seasoning salads, soups or meats.

Allium schoenoprasum. True Chives. Small clumps, 10c. 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c. (Try wintering in a pot.)

Brunsvigias, Lycoris and Nerines, we list only in Fall Catalogs, but the best time to move them is mid-summer, as soon as they become dormant. They will flower much better. It's hot then but if you feel energetic, order at that time. Refer to last fall's catalog. Send a dime for a copy if you have none.

IRIS FAMILY — Iridaceae

The Iris is the type genus of this family, which includes Iris, Gladiolus, Watsonias, Ixias, Freesias, Sparaxis, Tritonias, Babianas, Moraea, Marica, etc. Bearded Iris and Gladiolus are the outstanding members of the Iridaceae.

No garden is complete without a profusion of modern **Bearded Iris**. They may be planted any time of year. Earlier planting results in more flowers, but we have planted as late as March and had quite a few flowers. But try to do it in Jan. or Feb.—as early as possible.

Our "Iris 400, Price List," lists nearly 250 of the newest and best. The culture information is valuable as it tells you how to grow them and how to get a profusion of flowers every year. In order to make this available to everyone, whether they wish to buy or merely want the culture information, we charge a dime for it. Don't ask for a free copy. This is a folded sheet, 9"x18", printed on both sides, no illustrations.

Special Offer of Bearded Iris. We have a surplus of several excellent varieties. **Lot 1** consists of Iris we listed in Spring 1950 catalog. (Price now 15c.) They are modern Iris but average lower in price than those in Iris 400 price list. If you want to make a mass planting of Iris and names are not so important, this is a chance to get a lot for very little. There will be 20 to 30 varieties in each 100 lot. Price \$6.50 per 100. Express, f.o.b. La Verne.

Lot 2 are varieties listed in "Iris 400." There will be 20 or 30 var. in each 100 lot. Few of these are listed under 50c ea. Others are up to \$1.00 or more. Price is not considered. Price \$10.00 per 100. By express, f.o.b. La Verne.

Both lots are priced by express, f.o.b. This is safest and cheapest for winter shipment of Iris. If you have no express office, send postage for 12 lbs. See Garden Supplies for finding amount.

If you live in the Los Angeles area, come out and see our Iris in bloom. This is a warm winter and flowers will likely be earlier.

GLADIOLUS

How to Grow Gladiolus. Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring

in the east) are reasonably sure to escape the attack of thrips. Our glad bulbs are especially grown for this purpose, matured early and dug in August. But if you plant recently dug bulbs you will gain nothing; they will continue their rest of three months before starting.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster can be bought from most local feed or seed stores. Probably Chlordane also. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants and other pests. Dusting or spraying with D.D.T. is also very effective. Our bulbs have been treated and will need no further treatment before planting.

Dust *Gladiolus* 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

Many will prefer to spray instead of dusting. For a spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.15 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good *Gladiolus*. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

Sizes. Size No. 1, 1½" up. No 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1". No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or 2; M. means medium, No. 3 or 4; S. or small are No. 5 or 6. Smallest sizes bloom and often bulblets. No. 2 and 3 are preferred for growing commercial cut flowers.

Prices are for one bulb. Multiply by 10 for price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen. In the following list we have added a number of the very latest sorts that you will all want to try.

Our bulbs are grown in rich soil, on the heavy side. They are not always as nice looking as bulbs grown in the thinner sandy soil. They often perform better and we guarantee them to grow well.

Birch Red. The new, "best red," deep color and it stands the heat. L. 12c.

Buckeye Bronze. Red bronze. Fine cut flower. L. 12c.

Burma. Heavily ruffled, deep rose red. L. 8c.

Capeheart. Early, salmon rose. L. 6c.

Connecticut Yankee. Reddish pink. A new favorite pink and perhaps the most beautiful of all. L. 13c.

Debonaire. Well known tall pink. L. 5c.

Elizabeth The Queen. Deeply ruffled, large flowers. Many consider it the most beautiful gladiolus. L. 10c.

Ethel Cave Cole. Florists' favorite light pink. Large flowers, early and near perfect. L. 6c. No. 1 and Jumbos for 8c. They are a little earlier.

Evangeline. Palmer origination (Greta Garbo x Elizabeth The Queen). Ruffled, light rose. Up to 5½ ft. tall and sometimes 12 open. One of the most beautiful varieties. All sizes sold for \$10.00 in 1948 and for \$1.00 last year. No. 3 bulbs for 45c.

Florence Nightingale. Ruffled pure white that many think is the best of all. 30" flower head, 8 or more open, 5½ ft. tall. L. 15c.

General Eisenhower. Begonia rose, often 7" wide. 8 to 10 fls. open at one time. A strong, outstanding glad of greatest merit, named for that kind of a man. The bulbs are No. 1, too, and will each give two spikes. 15c.

H. B. Pitt. Very fine, large orange pink. L. 10c.

Margaret Beaton. Pure white with scarlet blotch. L. 6c.

Pacifica. Very early tall, large white. Fine for cutting. L. 7c.

Red Charm. The favorite florists' pure red. L. 7c.

Red Unknown. A fine early red. Name unknown. 6c.

Snow Princess. A very fine early white. L. 7c.

Spic and Span. Ruffled deep pink. Very vigorous and even bulblets give nice spikes for cutting. L. 20c.

White Gold. The largest, tallest, early creamy white. The only criticism I've heard is "too large." It's a one spike bouquet. L. 8c. Jumbo, 12c.

Assorted varieties. Special low prices. We want to close out all small lots (all excellent kinds), lost labels and surplus stock in a mixture. **Sizes 1, 2 and 3, mixed,** 50c/doz. \$3.50 per 100 postpaid. For distant zones the proportion of No. 3's must be a little larger on account of postage cost. By express f.o.b. for \$2.50/100. **Sizes 1, 2, 3 and 4.** Mostly the smaller sizes but all are flowering sizes. \$2.00 per 100, postpaid.

Assorted Bulblets. \$1.00 per pint. \$1.75 per quart.

Maricas

The Maricas have long been favorite house plants in the north. They have pretty flowers on a leaf-like scape. Following the flowers, two young plants take their place and become so heavy that the scape bends over to the ground (in the garden, here) and the plants take root, a foot or more from the mother plant. Hence they are sometimes called "Walking Iris" or "Apostle Plants." They usually flower Jan. to March.

Culture: They are shade plants and require a soil of peat, sphagnum and/or leaf mould with a little sand or rich sandy loam. Keep moist and growing all year. They are hurt but not killed by 26°, thrive in the house or greenhouse. Read about them in Mrs. Wilson's "Enjoy Your House Plants."

Marica gracilis. Smallest variety. 5" pot. 75c.

M. northiana. A larger plant, larger, better flowers but a slow propagater. 7" pot. \$2.50.

M. hybrids, Northiana x gracilis. We have raised some fine hybrids from this cross that have flowers equal or better than Northiana in size and form.

They are more profuse with flowers than either parent and midway in size of plants. They propagate far more rapidly than even gracilis, forming large clumps, with consequent increase of flowers. \$1.50 ea. Small plants, unlikely to flower this year, \$1.00.

LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinum*s, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

Gloriosa. Climbing Lily. The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower well but the larger ones will give 2 or 3 times as many. They also make much larger and more showy plants.

Our large bed of *Gloriosas*, next to one of our greenhouses, attracted more admiration last summer than any other outdoor item. Every one wanted them.

Culture. They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. We have grown them in rather heavy soil but with a very large quantity of peat added, but sandy soil is much better. *Gloriosas* prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. Do not water heavily until growth is well advanced. They can also be grown in large pots or, better still on a bench of soil 8" or 10" deep.

Gloriosa rothschildiana deserves the name **Glory Lily**. Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting

and are used in corsages. Plants 4' tall. Three sizes, \$1.25, \$2.25 and jumbo size for \$3.00. The largest size makes a very large plant, with many earlier flowers. It will be the center of attention in your garden.

OXALIS FAMILY — Oxalidaceae

Culture. Oxalis do best in sandy soil. They do very well also in poor soil. In pots, the drainage should be good and some coarse sand in soil will help. Most Oxalis like nearly full sun.

Oxalis brasiliensis. Bright magenta fls. Starts growing in winter and continues to late spring. Bulbs, 25c ea.

O. crassipes. Tuberous. Bright rose fls. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.00 doz.

O. crassipes alba. White variety of above. 25c ea. \$2.00 doz.

O. Regnalli. Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white fls. Tuberous rooted. 35c ea.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Fancy Leaf Caladium, Sauromatum, Amorphophallus, Arum, Drunculus, Anthurium, Spathiphyllum, etc. All are shade plants and need acid soils.

Zantedeschias are not true Callas, tho this is their common name. **Culture.** At this time and up to Apr. 1, you may plant or pot the pink and yellow callas. They need a mildly acid soil of sandy loam and peat. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best.

Zantedeschia rehmanni elegans. Improved light pink form. These are a large size, not small unimproved type that is offered at low prices. 40c ea. 3 for \$1.15. We can supply small sizes that may or may not flower for 25c ea. 5 for \$1.00.

Z. elliotiana. Deep golden yellow. If not given enough sun they become tall and spindling and fail to flower. 30c ea. 4 for \$1.00.

Z. aethiopica. White Calla, may be planted as late as early Feb. We have a few left at 50c ea.

Anthuriums and **Spathiphyllums** are closely related and were formerly both classed as Anthuriums. They are shipped in clay pots by express, f.o.b., any time of year, except as noted in the listing. The flowers slightly resemble Calla Lilies but have a waxed or lacquered appearance and are much used by florists.

Anthurium andraeanum. Shaffer Hybrids. These are considered to be the best Anthuriums. Fls. up to 6" long, orange-red, varying to rose or white. 6" to 8" plants that should begin to flower at 10" to 12". Sometimes they flower even at 8". Assorted colors, \$3.75. Red, \$5.00. Shaffer's Best Red, \$6.00. Blooming size, about 12", assorted colors, \$6.00. Large plants in bloom, assorted colors, \$7.50. All in clay pots, by express f.o.b. The smaller size, 4" to 5", assorted colors, will be sent out of pot by mail, postpaid, for \$2.00, with only a small amount of compost. Add more compost and pot in 4" pot. Shipped when warm, or will pot them, ship any time by express, f.o.b. for same price.

A. crystallinum. A beautiful foliage plant that does not need flowers. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on underside. \$3.75. Smaller plant, \$2.50. Both sizes are in clay pots, shipped any time, by express, f.o.b.

A. scherzerianum. This is a very small but very pretty species and they are more rare than those above. They are very free bloomers and a little less exacting in all requirements, therefore easier for amateurs. Some are red (var. *atrorubrum*), others variously spotted red on a white ground (var. *rothschildianum*). We can only offer assorted colors, blooming sizes, for \$3.75, potted. By express, f.o.b.

Spathiphyllum clevelandi. Close relative of Anthurium and formerly so classified. Fls. are white and freely produced. Very easy to grow. Blooming sizes for \$3.50 and \$2.50. Smaller sizes for \$2.00 and \$1.50. All sizes will be shipped in clay pots, by express, f.o.b. any time, or in warm weather at the same price, out of pot, postpaid. Use 4" pots for smaller sizes and 5" for larger. If shipped out of pot, you must add some compost to that in which we pack.

FANCY LEAF GERANIUMS — Geraniaceae

Fancy Leaf Geraniums, Scented Leaf and new Zonals are ideal pot plants. Geraniums have long been favorite pot plants in the north and garden plants in the south. Dr. L. H. Bailey says in his Cycl. of Hort., "Geraniums probably stand closer to the lives of a great number of persons than any other ornamental plant. If a window or a garden can have but one plant, that plant is likely to be a Geranium."

Culture. The small plants when received may be planted in a 3" pot. They should never be overpotted. Later shift to a 4" pot. This is about the right size to maintain a Geranium for house culture. They flower well if root bound but in a large pot they make rapid growth, become too large and do not flower. We find that small plants when we receive them start best in pure sand with possibly only a little screened compost added, but no "dirt." Later when transplanting one can add a little loam to the coarse sand and compost, but no fertilizer. When growing well if one wants larger plants—use Spoonit. The best temperature is 40° at night and 60° to 80° day time. Night temperature becomes dangerous at 26°. Best to see that it is never under 32° and rarely that.

Sun Exposure. Shade for 2 or 3 days and gradually increase to full sun. They like sun.

Watering. Do not keep wet or soggy. Let them become on dry side, then water but do not allow recently established plants to become dry.

We advise early orders, before warm weather arrives. We can ship most of the winter, but not when hot in summer.

Fancy Leaf Geraniums have colorful attractive foliage and usually less conspicuous flowers.

Distinction. Compact pot plant. Small, round leaves with toothed and crinkled edges. Dark, clean cut narrow zone near outer edge, in strong contrast, gives distinction. \$1.00.

Happy Thought. Bright green leaves with large light yellow center and splashes of brown and orange. Faintly zoned. Vermilion fls. Healthy compact pot plant. \$1.00.

Jubilee. Golden green leaves with a fine broad red-brown zone. Easy grower. \$1.00.

Marechal MacMahon. Golden yellow-green leaves with red-brown zone toward center. Small scarlet fls. A colorful plant. Sometimes pink spotted near margin of old leaves. \$1.00.

Skies of Italy. Very fancy tri-color leaves, deeply notched. Dark zone splashed with crimson and orange. The green background has a yellow edge. A strong grower. Keep it pot bound and cut back strong shoots to encourage short side growths. Light feedings of Spoonit intensify color of all varieties. Mature plants are very colorful. \$1.50.

Wilhelm Langguth. (Mrs. Langutt) Silvery green leaves, bordered white. The best white leafed variety. \$1.00.

Standard Zonal Geraniums. These have less fancy foliage but larger and nicer flowers than the Fancy Leaf Zonals.

Better Times. Large round flowers, carmine and red in large clusters. The best seller in 1951. \$1.00.

Maxime Kovalevsky. A red that may possibly be described as pimento-red. Large round flowers in large clusters that are unusually attractive. \$1.00.

Scented Leaf Geraniums are liked by many as pot plants or garden plants.

Pelargonium crispum, Prince Rupert. Stiff, much crinkled, small leaves densely placed on an upright stem. Lemon scented. Very fine for pots or garden. \$1.00.

P. denticulatum tomentosum. Denticulate leaves on an upright stem, scented peppermint. A pretty plant for pot or garden. \$1.00.

P. fragrans. Small round grey leaves strongly scented nutmeg. Small white fls. \$1.00.

When you compare above prices with the prices in other catalogs, please note that our prices include the postage. You only need to send price of plants and for Insurance or Special Delivery if wanted. All the catalogs that we have require you to send an additional amount for postage that makes them cost as much or more than ours. Besides, we guarantee safe delivery in a living condition.

THE GESNERIA FAMILY — Gesneriaceae

Includes Gloxinia, Smithiantha, Isoloma, Episcia, Streptocarpus, Achimenes, Aeschynanthes, and ending here with Saintpaulia or African Violet. Many of these have received other names by botanists. We use the valid names approved by **Gentes Herbarum** but in order that you do not order plants that you already have we try to give the synonyms.

Culture of The Gesneriaceae. This is one of the most distinguished plant families. The Gesneriads listed here are all tropical. They are natives from Mexico to Brazil in America or from the equator to the Cape in Africa. Most of them are warm house plants.

The culture requirements are so similar that we can generalize on most points. Any exceptions will be noted with the listings. They may be either tuberous rooted and deciduous or fibrous rooted and evergreen.

Storage of Tubers. Tubers may be left in the pots or baskets when dormant, but dry and warm, or they may be dug, dried and stored in vermiculite. Smithianthas multiply rapidly and should be divided as crowding them gives unsatisfactory results. Achimenes are rapid multipliers but may be crowded more and we sometimes leave them in the same basket or pot. Large tubers like Gloxinias and Corytholoma should be shifted to larger pots usually. Most tubers may be dried off soon after flowering. Best storage temperature is about 50°.

Fibrous Rooted Gesneriads, Streptocarpus, Aeschynanthes, Episcia, Columnea, etc. are evergreen and must be kept growing all year.

Basket Culture is our method for Achimenes and fibrous rooted Gesneriads that vine. Many good growers prefer pots. Some grow in boxes or tin cans. Line baskets with a compressed layer of wet sphagnum. The compost for the center may be any combination of coarse fibrous peat, sphagnum and leaf mould. Well divided osmundine may be added to make it coarser, if too fine. Peat must be wet in advance as it is difficult to wet it thruout in a basket. The compost should be coarse enough to allow water to drain freely and to prevent its retention in a dense sodden mass, which prevents entrance of air. Plants breathe. All parts need air. But do not allow compost to become dry between waterings. Keep it moist not soggy.

For plants that vine like Aeschynanthes or Columnea, we usually add enough sand to make the compost feel gritty.

Pot culture is much the better for Gloxinias, Smithiantha, Corytholoma cardinalis (but not C. umbellata) and those having sturdy upright stems. We have had best results with Isoloma in pots, altho the long stems of most sorts will trail over the sides. It may be our basket culture was faulty. For pots we use a similar compost with sand, enough to make it gritty in texture and rather more than we would use in a basket. We have seen very good Gloxinias grown in coarse sand with little compost or soil, but we would not venture it. There must be plenty of drainage material in bottom of pot. See potting directions under, "General Culture." When a plant becomes too large for its pot—shift to one size larger.

Fertilizing. See General Culture. We do not add fertilizer to soils or composts usually, but bone meal is good and it does not burn. A little powdered dairy or sheep manure is often used. We prefer to add pinches to surface when growing well—if we use at all. We prefer liquid fertilizers when in growth. We never use inorganic, chemical fertilizers, for anything, anywhere.

Light Exposure. Most gesneriads are shade plants, but they do need much light

and most of them like a little morning and evening sun. Light shade is needed in winter. If Gloxinias do not receive enough filtered sunlight they become "leggy," poor plants with little or no bloom. Enough sun is required by nearly all plants to make proper growth and flowers. If *Smithiantha* have weak stems and fall over it can result from: compost not firm enough; becoming too dry; not enough light.

Watering. Do not allow plants to become dry thruout. They should never wilt. Water when surface appears a little dry. They are natives of regions of heavy rain fall. Early morning is the best time as if sun touches wet foliage it becomes discolored and wet foliage at night is not good.

Best Temperature for nearly all is 50° to 70°. 80° is not bad. Those we list are tropicals. *Streptocarpus* like cool temperatures and *Achimenes* when in flower.

Gloxinias. California grown, 1¼ to 1½" tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrina**, from light rose to dark lavender. Characteristics are the small tiger spots; **Tigrina**, **Pink Edge**; **Tigrina**, **Crimson Rose**; **Violaceae**, soft violet. These are a full size larger than we listed last year, but are priced at only 5c more. Price 40c ea. 6 for \$2.00, if all one kind or assorted and in one bag. Complete collection labelled, \$4.40.

Do not be misled by magazine promotion or advertising. The best American growers of Gloxinias are Vetterlee and Antonelli Bros., California growers.

New Hybrid Gloxinias, our own growing. **Pointille**. Large flowers in many shades but all are spotted in a different way from *Tigrina*. All are beautiful and some are astonishingly so. Very large, 2" tubers, \$1.00. 6 for \$5.00. **Frederick Benary**, scarlet, white throat; **Rose Sensation**, brilliant carmine rose; **Swiss Emblem**, scarlet and red. These three are good flowering size usually 1" or over. Price \$1.00 ea. 6 of one kind only, for \$5.00. One of each of the 4 new varieties, labelled, \$3.85.

Collection of all 16 named var. \$8.00.

Gloxinia Seed, saved from named varieties, mixed. Seedlings flower in about 5 mo. 50c per packet. Seed of **Antonelli Hybrids**, very small packet of at least 10 seeds, 50c.

Culture. Place fine grained vermiculite in the bottom of a plastic refrigerator dish ¾" deep and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We also plant seed in 9" pans, half filled with peat and milled sphagnum. When planted cover pot with glass. We grow many rare seeds by either method, including African Violets.

Episcias have gorgeously colored foliage. They are very tender tropicals and should not be colder than 60°. At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50°. They make stolens or runners like a strawberry and new plants are made in a similar manner. We plant in baskets of sphagnum and hair pin the little plants on stolens to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. Flowers are usually bright scarlet and foliage usually villous, or hairy and velvet like.

Episcia chontalensis, green leaves, light blue fls., \$1.25. **E. coccinea**, brownish, villous leaves with silvery veins, \$1.00. **E. cupreata**, var. "Silver Sheen." Lvs. bright silver with green margins. \$1.50. **E. lilacina**, light bronze lvs., \$1.50. **E. splendens**. Silvery light green lvs. They make large plants. \$1.50. **Collection.** One of each 5 species, \$6.25. These prices include postage. Best if you add Special Delivery fee. Delivery, late spring when warm.

Aeschynanthes pulchra is now the valid name for the former *Trichosporum pulchrum*. The authority is *Gentes Herbarum*, Cornell University publication. Fortunately, amid the vicissitudes of nomenclature changes, the plants remain unhurt and unchanged. This one is a nice trailing, almost woody vine. In nature, they are said to be epiphytal and to climb trees. If they do, I envy the monkeys in those trees as the plants

are attractive and the freely produced flowers are tubular, vividly colored, freely produced.

They are tender tropicals and shipment will be made only when weather permits, in spring. We offer large blooming size plants, properly established in 8" galvanized wire basket with hanger. These are much larger plants than we sold for \$3.75 but price remains the same, express f.o.b. (Baskets and compost alone would cost \$1.25.) Established in clay pots, \$3.00, express, f.o.b. Shipment out of pot is a hazard and we do not guarantee safe arrival. We will ship same plants, tops cut back a little, \$3.50 postpaid.

Smithiantha (Naegelia) are fine tuberous foliage plants. The cordate leaves are covered with soft hairs that give them a velvety appearance. Their colors change when viewed at different angles. The attractive flowers are tubular in form. **Culture** like Gloxinias and Achimenes. Use 5" pots for single tubers. Add a good proportion of sand to the compost as for Gloxinias. As foliage plants, Smithianthas rival Fancy Leaf Caladiums or any others.

Smithiantha zebrina. This species has fine large rounded leaves, mottled and veined red-brown. We have two types of flowers. Orange flowered, \$1.00 ea. Pink flowered, \$1.50 ea.

S. cinnabarina. Very dark red, velvety leaves, a gorgeous species. The cinnabar red fls. are spotted white, 1½" long. \$1.50.

S. hybrida, Orange King. Rich red colors of leaves are changeable as viewed at different angles. \$1.50. Smaller but good tubers, \$1.00.

Isoloma, (Tydaea) are long stemmed plants from the American tropics. Fls. are tubular, richly colored in scarlet and orange shades. The decumbent stems trail nicely in a hanging basket but so far they do not make tubers for us in baskets and seldom flower. I believe the reason may be that we add sand to pot culture but not to basket culture. However sand can be added to the compost in baskets and we shall try that. For the present we advise pot culture and the stems may be staked if pots are not hung.

Isoloma, (Tydaea), van Tubergen Hybrids, assorted. These are probably the best and the flowers are very showy. These choice hybrids cost more than species, but we are offering them at a special low price as we happen to have a good stock this year for the first time. Price, tubers 50c ea. Ready now.

ACHIMENES

Achimenes are one of our most popular house plants. They are stemmed plants, usually trailing in habit and therefore ideal for basket culture. Flowers are like tiny Gloxinias. The tubers are very small and resemble tiny pine cones. They increase rapidly.

Culture is very similar to that of Gloxinias. In a 5" pot, 1, 3 or 5 tubers may be planted. Keep them slightly moist until they come up and water more liberally when in full growth. This class of plants must be kept moist at all times and therefore drainage must be perfect to avoid sogginess. If the potting medium is peat, milled sphagnum and sand the drainage will be good. We use sand only in pots, not baskets. A most satisfactory way of growing Achimenes is in wire baskets. One can plant several tubers in an 8" basket. We use 16" baskets for about 30 or more tubers. Smooth the upper surface and place tubers around perimeter and in center. Cover about ¾" to 1". Some tubers start very soon. Others may require several weeks. If tubers are broken every piece will grow but small pieces produce small plants. They should be stored in sand, peat or vermiculite at about 60°. Read, "Culture of Gesneriads."

To save space, we must condense descriptions and list all in one paragraph. You may order by name or number but present numbers differ from those of previous catalogs.

1. **Ambroise verschaftelt.** Veined petunia purple on white ground, 20c, 3/50c.
2. **Andersoni.** Deep pastel blue. 20c, 3/50c.
3. **Atropururea.** Red purple. 20c, 3/50c.
4. **Camille Brozzoni.** Pink lavender. Small fls. in profusion. 25c, 3/60c.
5. **Carmen The Gypsy.** Dark carmine fls., dark foliage. 35c, 3/\$1.00.
6. **Carmine Queen** or Firefly. Bright carmine lake. 30c, 3/80c.
7. **Charm.** Large, delicate pink fls. on small plant. 40c, 3/\$1.15.
8. **Diadem.** Large, fuschia purple fls. 30c, 3/80c.
9. **Edmond Boussier, Improved.** Purple

striped, yellow center. 25c, 3/60c. 10. **Escheriana**. No description available. Rare. 35c, 3/\$1.00. 11. **Galatea**. Hyacinth blue, light center. 20c, 3/50c. 12. **Ghiesbreghtii**. Large, tubular red-violet. 30c, 3/75c. 13. **Grandiflora**. Red-purple fls. Lvs., red underneath. 25c, 3/60c. 14. **Harry Williams**. Cerise fls. 2 ft. upright stems. 25c, 3/60c. 15. **Little Beauty**. Salmon pink, veined red. Dwarf habit. 25c, 3/60c. 16. **Longiflora Maduna**. Rose purple, white throat. Lvs. veined red. 35c, 3/\$1.00. 17. **Loveliness**. Violet fls., late, very profuse bloomer. Dwarf habit. Rightly named. 25c, 3/65c. 18. **Magnificent**. Petunia purple. Beautiful, sturdy plant. 25c, 3/65c. 19. **Master Ingrami**. Crimson red fls. 35c, 3/\$1.00. 20. **Mauve Queen**. Violet blue, spotted crimson, yellow eye. 30c, 3/80c. 21. **Maxima**. White, purple eye, feathered red. 30c, 3/80c. 22. **Mexicana**. Dark blue, vigorous, free flowering. 35c, 3/90c. 23. **Milton**. Strawberry red, orange center. 30c, 3/75c. 24. **Miniata**. Cherry red to carmine. Early. 35c, 3/90c. 25. **Mme Geheune**. Rose purple. Beautiful foliage. 35c, 3/90c. 26. **Patens**. Reddish violet white throat. Short stems. 20c, 3/50c. 27. **Pedunculata**. Orange red with yellow throat, spotted red, late bloomer. 35c, 3/\$1.00. 28. **Pulchella**. Bright red 25c, 3/60c. 29. **Pulcherrima**. Rich purple. May be same as Royal Purple. 20c, 3/50c. 30. **Royal Purple**. (**Purple King**). Petunia violet. Early. Vigorous. Considered the best. 20c, 3/50c. 31. **Venusta**. Violet purple. Semi-double fls. The only double. 30c, 3/75c. 32. **Vivid**. Cerise lake. 25c, 3/60c.

Collection No. 1. Assorted varieties, 10 for \$1.00. **No. 2.** Our selection, 10 var. labelled, \$2.00. Both collections contain some of the better sorts,—not just cheaper sorts. **No. 3.** One each of 32 var. labelled. Listed for \$8.50. Price \$8.00. **No. 4.** Three of each of 32 var., labelled. 96 tubers, listed for \$22.35. Price \$20.00 They are rapid multipliers.

AFRICAN VIOLETS — Saintpaulias

The latter is the correct botanical name. They are the most popular of all house plants at the present time and they are likely to retain this eminent position in popular favor indefinitely, as they deserve it.

Saintpaulias were discovered by Baron von Saint Paul, who sent seed to Europe where they first flowered in 1893. They are natives of the Usambara district of Tanganyika, equatorial east Africa. Tanganyika includes Lake Victoria, source of the Nile, on the north and extends 12° south. It is entirely in the tropical zone. It is always summer, with almost no variation or seasonal changes in the climate. Due to the hot Indian Ocean on the east, the humidity is high.

The mean average temperature at lower elevations is 80° with little variation on either side. It is a "mean" temperature for the white races and few live there. At higher elevations the mean average is about 70°, which is not uncomfortable, but monotonous.

The Saintpaulias soon spread from Europe to most countries where house plants are grown. Their popularity was instant and always growing in intensity. Mrs. Wilson, in her book, records the first real test of their popularity. In the fall of 1946, an Atlanta, Ga., nursery sponsored the first African Violet Show. The thousands who attended from everywhere created a traffic problem which extra police could scarcely handle. Later, someone in Manheim, Pa., grew a plant with an off-white flower. It was advertised as a yellow, and created a furor. Collectors from many states visited Manheim to see it, to buy plants or leaves. Local citizens were besieged by questions to the point of much discomfort. The myth of a yellow Saintpaulia still lives and we get inquiries for them nearly every day. We would like to answer this question once and for all. But it will not be for always. It will crop up for many years.

There is, there never has been and there probably never will be a yellow Saintpaulia.

Culture of Saintpaulias. Climate and soil conditions in the habitat of a plant supply a good starting point for the discovery of their proper cultivation. Plants possess a variable degree of tolerance and adaptability. Often a plant or an animal, transplanted to new conditions, do better in the wild or under culture in the new situation. For example, rabbits in Australia, the English Sparrow in America and Cactus in Africa appear to have gained by transplantation.

African Violets under the hand of man have been vastly improved and many new

colors and forms have been produced. Grotei, the climbing African violet, and other new species have been discovered. They have also adapted themselves to somewhat different conditions. They are strictly house plants only.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. It may be that if kept at 50° for some time they might then survive a lower temperature. But they neither grow nor flower at 50°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Express is safer. Nor do we ship on very hot days in summer. We plan to ship so that they do not arrive to you on a week end and thus remain in a carton a day or two longer. We have sometimes shipped large orders, heavily insulated, to northern customers, living near an air port and who were able to meet the plane and transport in a warm car, in the winter.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. If late in morning, cover plants with newspaper after watering, until dry. The interval between waterings should be long enough to permit the top soil to become slightly dry.

Good **ventilation** is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Some growers sell prepared soils. Probably they are nearly all good. But the plants have a considerable tolerance and do well in a wide variety of soils. They should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good.

We use about one half oak or redwood leaf mould and one half sandy loam or good loose garden loam. To this is added enough sponge rock or coarse sand to make the soil gritty and aid drainage. Fine screened peat is as good or better than leaf mold. It is not at all necessary to buy prepared soils. We list peat. Local nurseries sell leaf mould. Nature supplies sand, make your own mixture and save.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity seems to us to be one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely, plants in a south window, anywhere in the north temperate zone, in winters, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The plants need much light. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun. Medium green is about right. Very dark green foliage indicates insufficient light and lack of flowers corroborates it.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in *How To Grow African Violets* (which you should have,—see our book list), says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Greenhouse growers who force lilies for Easter are able to advance the blooming date by the use of electric light. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the northern states where winter days are short and dull.

Humidity. The humidity of our houses is likely to be not much over 25%. One can increase the humidity around the plants sufficiently by setting the plants in saucers or in a long tray that will hold several pots. A chick feeder with guards removed makes a good tray. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. One way to remove and kill them is to use a bit of cotton on the end of a toothpick. Dip the cotton in alcohol and pick off the bugs. Do not touch foliage with the alcohol. Wonder Garden Spray, used as a spray is effective. A badly infested plant should be discarded or at least removed from vicinity of all other house plants. All effective insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mite spreads to all the plants and effective measures must be at once applied. An effective measure is to immerse entire plant and pot in water at 110° for 15 min. Keep water at this temp., adding more hot water. Wash shelves and pot saucers with ammonia solution. Repeat the treatment one month and again two months later.

When ordering, please name a few substitutes. Don't forget sales tax on Calif. orders. The **Special Delivery** fee gives special handling as well as Special Delivery and hastens delivery.

Customers are invited to visit our nursery when in Los Angeles area. Drive east on Garvey to Covina sign. Turn north to San Bernardino Ave. Thence east to Grand Ave. Turn north to Arrow Highway. Thence east to Esther in La Verne. Turn south one block to our nursery, 1412 Third St.

Distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in almost perfect condition. They did not quit blooming. We ship every week to Hawaii, frequently to Cen. America, Mex., Bermuda, Cuba and other West Indies, Alaska and even to the Philippines. These must go by air mail. We charge the customer the excess of Air Parcel Post above the cost to our 8th postal zone.

We usually succeed in delivering plants in excellent to perfect condition. We guarantee our plants to arrive in a living condition.

Azure Beauty. Beautiful double. Fls. white with lav. or blue markings. \$2.00.

Blue Heiress. Dupont. Brilliant blue fls. with girl-type foliage. \$1.50.

Blue Lady. (Hendrix) Large light blue flowers. \$1.50.

Blue Lady Girl (Hendrix). Light blue flowers girl foliage. \$1.50.

Blue Ohio. Very large blue flowers, lvs. heavy but small. \$2.00

Blue Warrior. Bright blue fls. Red underside of leaves. \$1.25.

Bronze Girl. Very lovely girl foliage. Fls. reddish. \$1.25.

Carmen. New. One of the best reds. \$2.00.

Delight. Double. Medium blue flowers. Sm. \$1.00.

- Double Fringed White.** New. \$2.50.
- Double Neptune.** (Queen Neptune) Lg. fully double, dark purple fls. \$1.25.
- Evening Sunset.** New. A light blue with an overcast of pink that predominates in the upper two petals, like sunset and blue sky. Very outstanding. \$2.50.
- Fantasy.** Lavender, variegated and splotted flowers. \$1.50.
- Frilled Blue Delight.** New. The petals are frilled. White edged with blue. \$2.50.
- Geneva's Daughter.** New light blue, white edge, with girl foliage. \$2.50.
- Geneva Rainbow.** Burgundy with white edge. \$1.00.
- Gorgeous Bicolor.** Beautiful large lavender, bi-colored fls. \$1.25.
- Gorgeous Blue Wonder.** White background shaded with a blue overlay. \$1.50.
- Grotei.** Climbing Saintpaulia species. \$1.50.
- Helen Wilson Bouquet.** Double. Wine red flowers. Girl foliage. \$1.50.
- Holly.** Lvs. are dark copper green, frilly pointed, purple underneath. Blue fls. \$3.00.
- Indianola.** Fls. bi-color. Lower petals lav. upper ones darker. Very dark green foliage with red under side. Beautiful. \$2.50.
- Innocence.** White. Very pretty foliage red underneath. \$1.75.
- Inspiration.** (Violet Beauty Supreme). Very large blue-lav. fls. \$2.50.
- Juno.** (Hendrix). Lg. fls. lilac with violet top petals. Large leaves. \$2.00.
- Lady Geneva.** Pat. Dark blue with white edge. \$1.00.
- Lavender Beauty.** Lovely silvery mauve flowers. Very large. \$1.50.
- Navy Bouquet.** Very dark navy blue, double fls. Profuse bloomer. Crinkled lvs. \$1.75.
- Oakleaf Girl.** (Hendrix). Very lg. flowers. Med. blue. \$1.50.
- Orchid Neptune.** Double. Orchid sport of double Neptune. \$1.50.
- Orchid Sunset.** Double. One of the Rainbow series. Clear orchid. \$1.50.
- Orchid Velvet.** Very large fls., free flowering, Dupont lvs. \$1.50.
- Painted Girl.** Snowy white, glistening as if covered by diamond dust, bordered by Orchid. The flower is a perfect gem. \$2.50.
- Perfection.** (Hendrix) Compact girl foliage. Miniature. Orchid fls. \$1.25.
- Pink Cheer.** New. Beautiful plant and deep pink flowers. \$2.00.
- Pink Delight.** Light, clear pink fls. in abundance. Lovely dark foliage. \$2.00
- Pink Fantasy.** Large pink flowers, shaded an intense cerise-red in throat. Tall and erect. Foliage deep green. \$2.50.
- Pancho.** (Thalheimer) Very large deep blue flowers. Lovely girl foliage. \$2.00.
- Portland Rose.** A vivid shade of rose with darker eye. A new color in A. V. \$2.00.
- Purple Knight.** Excellent large, free flowering. Bluish purple. \$1.75.
- Purity.** Double white. \$1.50.
- Red Girl.** One of the prettiest leaves in our collection. Velvety with red in center of leaf if plant receives enough light. \$2.00.
- Red King.** A rich burgundy red against velvety foliage. Does not fade. \$1.50.
- Red Lady.** Exceptionally clear color which does not fade. Girl foliage. \$2.50.
- Red Princess.** An outstanding red, crimson-wine red. \$2.50.
- Rose Rainbow Double.** Rose and white variegated. Very desirable. \$2.00.
- Ruby Bouquet.** Dbl. Vivid ruby wine color, glossy dark green leaf. \$1.50.
- Ruby Jewell.** (Hendrix). Red flowers. Small plants. \$1.50.
- Ruffled Beauty.** Ruffled girl foliage with highly serrated edges. \$1.50 sm.
- Ruffled Queen.** New. Color blue burgundy, with ruffled, frilled petals. \$2.50.
- Sailor's Delight.** Light blue double flowers, girl foliage, excellent. \$1.25.
- Sea Girl Double.** Medium blue, girl foliage. \$1.25.
- Sherry Girl.** Beautiful dark green girl foliage, formally arranged. Blue fls. well above plant. \$1.50.
- Snow Girl.** Pure white flowers, girl foliage, sm. \$1.25.
- Snow Prince.** Very large flowers in abundance. We think one of best. \$1.50.
- Taffata.** Named because of shiny foliage when mature. Mauve fls. \$2.50.
- Tear Drop.** Dwarf. The small semi-double blooms are clear baby-blue. \$1.50.
- Trumpet Girl.** (Hendrix). Beautiful girl foliage, lav. fls. Miniature. \$1.50.

Twilight. Varigated blue and white fls. Very large and beautiful. \$2.50.

Violet Geneva. (New Hybrid) Available June 1. \$2.50.

Violette Elf. Dwarf. We have only a few of these unusual plants. \$1.50.

Western Girl. (Rector). Fls. Dauphin's Violet. Lovely foliage. Good bloomer. \$1.50.

African Violet Leaves. 35c ea. 3 for \$1.00. 12 for \$3.00. Over 12 lvs. 25c ea.

Amethyst, Baby Blue Eyes, Blue Boy Supreme, Blue Butterfly, Blue Chard, Blue Girl Compacta, Blue Moire, Blue Girl Supreme, Blushing Maiden Supreme, Bronze Girl, Commodore, Crystal Blue Dol., Dainty Maid, Diplotricha, species; Dimples, Double Margaret, Dupont Lavender Pink, Dupont Blue, Nos. 2 and 4, Edena Bi-color, Edena Lily, Evelyn Banks (Pink), Evening Star, Geneva Star, Frieda, Gypsy Ann, Gypsy Prince, Gypsy Princess, Gypsy Queen, Ionantha grandiflora, Lav. Pink Princess, Marine, Maroon, Norsman, Orchid Wonder, Pink Queen, Pink Supreme, Purple Dawn, Red Chief, Red Edged White Boy, Red Moire, Red Queen, Rosanna Charm, Rosanna Moon, Rosanna Purple Eye, Rosanna Swirl, Sailor Girl, Saffron Red Boy, Sapphire, Sea Foam, Sea Queen; Sky Blue, White King, White Supreme, Wine Velvet, Wonder Star.

Price Leaves 50c ea. 12 for \$5.00. Apollo, Dbl. lt. blue; Black Beauty, Blue Jewel, Blue Ohio, Bronze Bicolor, Bronze Queen, Brussels Sprout, Bugle Girl, Charro, Christina, Crazy Quilt, Diplotricha Amazon, Dbl. Blue Warrior, Blue Lav. Fringette, Red. Lav. Fringette, Dark Blue Fringette, Mauve Fringette, White Fringette, Fairy Boats, Gypsy Apple Blossom, Gypsy Alma Girl, Gypsy Blue BI, Gypsy King, Gypsy Jewel, Gypsy Ice Girl, Gypsy Lace, Gaucho, Helen Wilson Bouquet, Lady Loreta, Lady Grace, Moro, Opal Girl, Petite Double, Queen Betty, Red Dupont, Rose Marie, Rosetta Red, Royal Girl, Rose Crinkles, Ruby Bouquet, Dbl.; Sherry Girl, Tear Drop, Dbl.; Twilight, Tinted Girl, Western Sunset, Western Girl, Yellow Brown Girl, Velvet Glow.

BEGONIA FAMILY — Begoniaceae

How To Grow Tuberous Begonias. No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics. Florida customers have reported failure.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Water hurts neither foliage or flowers. The best place is in a lath house, north of a building or under trees.

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use $\frac{2}{3}$ well rotted leaf mould and $\frac{1}{3}$ rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber.

Begonias are shade plants but to bloom well they should have all the sun they can stand without burning. In early morning and late afternoon, full sunlight is best. For the rest of the day 50% is about right, here. The proportion varies with latitude and climate.

Begonias like moisture but do not over water starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts on plants, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber,— except on the Lloydii. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list $1\frac{1}{4}$ "— $1\frac{1}{2}$ " tubers, a medium size. The size of tubers does not govern

size of flowers, however. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

Imported Begonias. Be sure you do not purchase them. They are fine looking tubers but produce poor flowers. The great improvements made in recent years is wholly due to a small group of California growers. Many advertised "specials," cheap in price, are imported tubers or very small Calif. tubers.

Prices. We have reduced prices but a few of our customers try to reduce them still further by applying the dozen rate to 6 or 12 differently labelled tubers. Please remember the dozen rate applies only when 6 or 12 tubers, bulbs or plants of one kind or assorted are listed as one item and under one label or in one bag. If separately labelled 12 tubers take the single rate.

Giant Double Camellia Flowered. Offered in 11 colors, White, Pink, Rose, Crimson Rose, American Beauty, Yellow, Apricot, Salmon, Orange, Scarlet, Red. Price 25c ea. Six, one kind only or assorted, \$1.25. The 11 var., in one bag for \$2.50.

Giant Ruffled Double Camellia Flowered, by Antonelli. In 9 colors, White, Rose, Scarlet, Red Salmon, Blush, Apricot, Pink, Yellow, Cardinal. 30c ea., 9 colors in one bag, \$2.25.

Giant Double Carnation Flowered. This type is similar but has fringed petals. The flowers are like huge carnations. 9 colors, white, pink, rose, Crimson rose, yellow, apricot, salmon, orange, scarlet. 25c ea. 6 of one kind or assorted for \$1.25. All 9 colors in one bag. \$2.00.

Giant Double Picotte. Also similar to Camellia Flowered but petals are edged white. 5 colors, pink, rose, salmon, apricot, red. 25c ea. 6 of one kind or assorted, for \$1.25. All 5 colors in one bag, \$1.15.

Double Hanging Basket or Lloyd. Smaller, double fls. on pendulant stems. Nice in pots, hanging baskets or rock garden. 9 colors, red, white, rose, scarlet, pink, orange, yellow, salmon, apricot. 25c ea. 6 of one kind or assorted, \$1.25. All 9 colors in one bag, \$2.00.

Giant Single Crispa or Frilled. Very large, profusely frilled and ruffled, single flowers. 9 colors, red, rose, scarlet, pink, salmon, apricot, yellow, orange, white. 25c ea. 6 of one kind or assorted for \$1.25. All 9 colors in one bag, \$2.00.

Giant Single Marginata. This is a two toned crispa type in 2 colors, white, edged pink, and salmon, edged scarlet. Either color, 25c. 6 of one color or assorted, \$1.25.

Giant Single Cristata. Derived from Crispa but less frilled. Each petal bears a coxcomb-like crest. Very new and novel. Assorted colors, 25c ea. 6 for \$1.25.

Begonia Evansiana. This is the Hardy Tuberous Begonia. We know that 20° does not injure it but do not know its limit of frost endurance. It is sometimes grown in pots but outside shade garden is its ideal place. Plants grow to 2 ft. with typical begonia foliage and a multitude of flowers. Sizes are available, 50c ea. 6 for \$2.50. Northern customers who try it for hardiness please report in 1953. Order before Apr. 1 as about that time sprouts may prevent sending later.

Begonia Collection No. 1. One each of all varieties and colors above listed would cost \$14.70 at single rates. Price, complete collection 56 varieties. \$12.50.

Named varieties of Tuberous Begonia. The following are the most gorgeous creations of Tub. Begonias ever produced.

Autumn Glow. Extremely large cristata. The crests are deep copper contrasting with the apricot of the rest of the flowers. Up to 10" wide.

Fascination. A crispa flower, white with a pink line on the edge, or picotee edge.

Red Triumph. A ruffled camellia type of ruby red with a velvety texture. Very large flowers.

Sunset. Profusely frilled crispa type, light copper with scarlet edge.

These are not graded to size but are usually close to 2" and will make large plants. Price \$1.00 ea., or the 4 var. for \$3.50.

The complete list including named, total 60 varieties for \$15.50.

THE ORCHID FAMILY — Orchidaceae

Many of our customers tell us they have long wanted to grow an orchid. It is possible for anyone to do so. We are again reducing prices.

We do not have much space here to describe them or to give culture directions. If genuinely interested, you will be pleased to send us 25c for "How To Grow Orchids," or 31c for air mail delivery. This 10 page booklet describes many types and gives culture and potting directions. But it is too brief about Cattleyas. If Cattleyas interest you, send for our 1949 Orchid Price List. We recently found only a few hundred stored away, so you must send us 15c for it and 6c more if for air mail delivery. This gives brief sufficient culture information. It also tells how to make a Wardian case. Listings of plants in this are cancelled.

Cymbidiums are as easy to grow as Begonias and culture does not differ greatly. For complete information you should order our booklet, How To Grow Orchids. One point we mention here. If you have difficulty in getting flowers, try giving them a rest in Aug. and Sept. Reduce amount of water but do not allow to become so dry that any foliage is lost or badly affected. Start liberal watering again, Oct. 1.

We still have a surplus and offer still further reduced prices.

Cymbidiums: Giganteum, very large plant. Many fls. brownish-yellow lined by red-brown; **Winter Cheer**, bronze and rose; **Doreen**, greenish-bronze; **Moir**a, greenish bronze barred rose; **Butterfly**, cream to tan. Price, one front bulb with foliage, each variety above, \$2.50. **Insigne**, makes very small plants that are nice in 6" or 7" pots. Pink and white fls., \$5.00; **Madeline**, large plants, rose pink. \$5.00. **Grandiflorum**, (**Hookerianum**), large, fine green fls., \$5.00. Clumps of 3 bulbs for 2½ times price of one.

Our Selection of named and labelled plants for \$2.25 or clump of three, often a blooming size, for \$5.65.

Assorted Cymbidiums. These are all named varieties purchased from a cut flower grower. But they are "Strays," the labels lost. Don't say you cannot afford an orchid plant or an orchid corsage as you can grow your own flowers. Price, one bulb with foliage, \$1.75, clump of 3 bulbs, \$4.25.

Cymbidiums and Cattleyas are standard orchids for corsages. Do not be misled by florid advertising of orchids recommended for constructing your own corsages. Recently an advertiser offered Bletilla and promoted it for corsage use. The flowers are much too small and they cannot be worn. They are not long lasting and the heat of a room or the body if worn will wither them quickly. You cannot even grow them in a warm room.

Hybrid Cattleyas. Nearly all our plants need repotting in fresh osmundine. We will have this done and plants will be ready to ship, in their clay pots, by Apr. 1. They will not need repotting after you receive them for 2 or 3 years. Many dealers sell you Cattleyas in 1 or 2 year old osmundine for more than our price.

Price, our selection of varieties, but if you tell us what you have, we will not duplicate them, \$5.00 ea. These will be blooming size plants in 5" or 6" pots or pans.

Cymbidiums and Cattleyas go by express, f.o.b.

MISCELLANEOUS

Anemones and **Ranunculus** are nice in pots and are hardy in the deep south. For a better description and good culture send 10c for our 1952 Fall Cat. Do not plant later than Mar. 1. Tecolote Giant Double Ranunculus or Single Anemones, 2 for 15c. 50c doz. 25 for \$1.00.

Maranta Kerchoviana. Rabbit Tracks. Nice, easy-to-grow shade plants, for pots. Acid soil. 75c.

Maranta sp. Taller plants. The foliage is striped light and dark green on upper side with a few white stripes and blotches. Red on under side. I have seen it labeled, M. bicolor and M. tricolor, but it has 4 colors in foliage. Rare. Price, \$2.00.

Pot Marantas in 5" pots in peat or leaf mould with a little sand, in shade and keep well watered for rapid growth.

Strelizia regina. Bird of Paradise. Musaceae, Banana Family. Large brilliant, bird shaped fls. in winter. Hardy at New Orleans. Easily grown outside in deep south or in tubs in greenhouse, half to full sun. Small plants, \$2.50, postpaid. Blooming size \$5.00. Large, \$7.50 per division singly—singly or in clumps. Two last, by express, f.o.b. Delivery, late spring, the proper planting time.

Ceropegia. The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. We supply small tubers. Plant at once and keep only slightly moist until started. The flowers are very unusual.

Ceropegia debilis. Cylindrical leaves. Rapid grower. 35c. Small, 15c.

C. Woodii. Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. 50c.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture** of Aechmea and Aregelia is the same.

Aechmea calyculata. Bright green leaves, yellow fls. \$2.00.

Aregelia spectabilis. Bronze foliage, barred grey green on back. \$3.00.

Billbergia Burkholtzi. Tall, slender, erect green leaves, Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 50c.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plant. 50c.

B. nutans x Cryptanthus acaulis. Highly colored, bronze and green leaves. Compact plant. \$1.50.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. rubro-cyanea. Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts, \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue, Rose bracts. \$2.00.

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new ground. \$1.50.

B. thrysiflora, (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs., banded white on back. Salmon bracts, green fls. \$1.50.

Collection all 12 varieties, value \$19.00. Express, f.o.b., \$16.50. By this method we can send larger plants. By mail, postpaid \$17.50.

Big 4 Collection. Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$2.75. Include Special Handling for these plants by mail.